

REMARKS

Applicant submits that original claims 1-21 and 23-30 were pending in this application. In the Final Office Action mailed June 22, 2006, the Examiner rejected claims 1-21 and 23-30. In this Response to the Final Office Action, Applicant has cancelled claims 6, 7, 10, 15, 24, and 25, and has amended claims 1, 8, 9, 11, 14, 16, 23, 26, 27, and 30. Reconsideration of the currently pending claims based on the preceding amendments and the following remarks is respectfully requested. For ease of reference, the Examiner's comments from the Office Action are reprinted below in 10-point bold type and are followed by the Applicant's remarks.

Claim Rejections – 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action;

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5-10, 14, 16, 23, 24, 27, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelley (US 2,340,597).

With respect to claim 1, Kelley describes a rotary slip lifter. Kelley further teaches slips (figure 1, item 13) attached to a pulling mechanism (figure 1), where the pulling mechanism is attached to a slip base (figure 1, item 2), and the slip base is seated in the main bushing of a rotary table (figure 1, item 4). Examiner notes that the pulling mechanism is considered to be all items—other than the slip bowl and rotary table—located to the left of an imaginary vertical line drawn through item 37 in figure 1. Kelley further teaches that the pulling mechanism is operated by a cylinder (figure 1, item 43).

With regard to claim 5, Kelley states that “lever 43...may be replaced by other suitable and conventional pneumatic or mechanical lever devices of a character well understood in the art,” which would encompass the pneumatic cylinder of claim 5. With regard to claims 6-10, Kelley describes a pulling mechanism with a bottom arm (figure 1, item 25), a top arm (figure 1, item 35), and a pull arm (figure 1, item 29). The slips are suspended from an accommodating link (figure 1, item 22), which is attached to a pull-arm extension (figure 1, item 26).

With regard to claim 14, the pulling mechanism (as defined above) of Kelley is within the boundary of the rotary table (figure 1, item 4) when in the activated and the deactivated positions.

With regard to claim 16, Kelley describes a slip base (figure 1, item 2) seated in the main bushing of a rotary table (figure 1, item 4), gripping means (figure 1, item 13),

manipulating means (figure 1, item 43), and connecting means, where the connecting means are considered to be all items—other than the slip bowl and rotary table—located to the left of an imaginary vertical line drawn through item 37 in figure 1. Further, as can be seen in figures 1 and 2, the manipulating means of Kelley’s device are never outside the boundary of the rotary table, neither in the activated nor the deactivated position.

With regard to claims 23 and 30, Kelley discloses a method of operating the power slip lifter apparatus described above. The method involves the following steps:

- a. Constructing the power slip lifter apparatus
- b. Manipulating the pulling mechanism between an activated and deactivated position wherein no portion of the pulling mechanism is outside the boundary of the rotary table in the activated position.

With regard to claim 24, Kelley teaches that the pulling mechanism is manipulated by a cylinder (figure 1, item 43).

With regard to claim 27, Kelley further teaches that the cylinder can comprise a pneumatic cylinder (page 2, column 2, line 70).

With regard to the Examiner’s rejection of claims 1, 5-10, 14, 16, 23, 24, 27, and 30 under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 2,340,597 (“Kelley”), Applicant has cancelled claims 6, 7, 10 and 24, and has amended claims 1, 8, 9, 14 16, 23, 27, and 30, to overcome the Examiner’s rejections. Accordingly, Applicant asserts that claims 1, 5, 8, 9, 14, 16, 23, 24, 27, and 30 (which have either been amended or depend from an amended claim) are now in condition for allowance.

Specifically, claims 1, 5-9, 14, 23, 24, 27, and 30, as amended, each require that no portion of the “slip base” be outside the boundary of the rotary table. These claims further require that no portion of the “cylinder” be outside the boundary of the rotary table. Finally, these claims require that no portion of the “pulling mechanism,” which comprises “at least one bottom arm and a top arm, wherein the at least one bottom arm and the top arm exhibit a parallelogram geometry,” be outside the boundary of the rotary table as well.

In contrast to the required limitations outlined above, the Kelley reference fails to disclose, *at a minimum*, a “cylinder” (referenced by the Examiner as item 43) wherein no

portion is outside the boundary of the rotary table. *See* Kelley, Fig. 2. Moreover the Kelley reference fails to disclose a “pulling mechanism” comprising “at least one bottom arm” (referenced by the Examiner as item 25) and “a top arm” (referenced by the Examiner as item 35) exhibiting a parallelogram geometry. *See* Kelley, Fig. 1. Accordingly, as the Kelley reference fails to disclose each and every limitation of claims 1, 5-9, 14, 23, 24, 27, and 30 (as those claims have been amended), the Kelley reference fails to anticipate those claims under 35 U.S.C. § 102(b).

Moreover, claims 16, as amended, requires that no portion of the “slip base” be outside the boundary of the rotary table. Claim 16 further require that no portion of the “manipulating means” be outside the boundary of the rotary table. Finally, claim 16 requires that “the at least one bottom arm and the top arm” of the “connecting means” exhibit a “parallelogram geometry.”

In contrast to the required limitations outlined above, the Kelley reference fails to disclose, *at a minimum*, the “manipulating means” (referenced by the Examiner as item 43) wherein no portion is outside the boundary of the rotary table.¹ *See* Kelley, Fig. 2. Moreover the Kelley reference fails to disclose a “connecting means” comprising “at least one bottom arm” (referenced by the Examiner as item 25) and “a top arm” (referenced by the Examiner as item 35) exhibiting a parallelogram geometry.² *See* Kelley, Fig. 1. Accordingly, as the Kelley reference fails to disclose each and every limitation of claim 16 (as that claim has been amended), the Kelley reference fails to anticipate that claim under 35 U.S.C. § 102(b).

¹ Strangely, the Examiner states that “as can be seen in figures 1 and 2, the manipulating means of Kelley’s device are never outside the boundary of the rotary table.” Office Action, at 3. However, even a cursory review of either Figure 1 or 2 of the Kelley reference shows that at least a portion of the “manipulating means” (referenced by the Examiner as item 43) is *clearly* outside the boundary of the rotary table (referenced by the Examiner as item 4).

² As the Examiner acknowledges that the “connecting means” of claim 16 is analogous to the “pulling mechanism” of claim 1, the Examiner’s citation to structures in the Kelley reference that correspond to the “at least one bottom arm” and “top arm” limitations of claim 1 apply equally to those same limitations in claim 16.

As such, Applicant respectfully suggests that claims 1, 5, 8, 9, 14, 16, 23, 24, 27, and 30 (which have either been amended or depend from an amended claim) are now in condition for allowance.³

Claim Rejections – 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level or ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 2, 3, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Baugh (US 4,269,277).

With regard to claims 2 and 17, Kelley discloses all the limitations of the above claims, except for the slip base being attached to the rotary table via Kelley bushing receptacles.

Baugh discloses a power slip assembly. Baugh further teaches a “base collar...equipped with throughbores by which the entire power slip assembly may be bolted to, for example, the framework of a fluid pressure drive assembly of a snubbing device, to a well workover rig, or to some other support means (column 11, line 49). It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have bolted the slip bowl of Kelley to the rotary table using the throughbores (or Kelley bushing receptacles) of Baugh, in order to have formed a strong, releasable connection between the slip bowl and the rotary table.

With regard to claim 3, neither Kelley nor Baugh discloses connecting the slip base to the rotary table with magnets. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Kelley in view of Baugh, so that the slip base would have been connected to the rotary table with magnets, since the examiner takes Official Notice of the equivalence of bolts and magnets for their being used to connect elements of a slip device to the rotary table. The selection of any of these known equivalents to connect the slip base to the rotary table would have been within the level of ordinary skill in the art. Further, it

³ Applicant also respectfully suggests that amended claims 1, 5, 8, 9, 14, 16, 23, 24, 27, and 30 are in condition for allowance in light of the prior art submitted concurrently herewith in the Supplemental Information Disclosure Statement.

would have been an obvious matter of design choice to use magnets to connect the slip base to the rotary table, since applicant has not disclosed that using magnets solves any stated problem or is for any particular purpose and it appears that the invention would have functioned equally well with bolts or magnets.

5. Claims 4, 13, 21, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Moore (US 2,545,627).

With respect to claims 4 and 26, Kelley discloses all of the limitations of the above claims, except for the pulling mechanism being controlled by a hydraulic cylinder.

Moore discloses a slip actuator device. Moore further teaches the functional equivalence of pneumatic and hydraulic cylinders, when he states that his pulling mechanism is controlled by “a plurality of hydraulic or pneumatic cylinders” (column 3, line 29).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the pneumatic cylinder of Kelley with the hydraulic cylinder of Moore, since the examiner takes Official Notice of the equivalence of hydraulic and pneumatic cylinders for their being used to control slip lifters or slip actuators. The selection of any of these known equivalents to control the pulling mechanism would have been within the level of ordinary skill in the art., as evidenced by Kelley and Moore.

With respect to claims 13 and 21, Kelley discloses all the limitations of the above claims, except for the ability to operate the device by remote control. Moore teaches that the hydraulic lines that control the lifting mechanism are routed to a control valve located at a remote point, “close to where the driller will stand.” It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, that if the pneumatic cylinders of Kelley were replaced by the hydraulic cylinders of Moore, then those cylinders could have been operated at a remote location, as also taught by Moore, in order to have kept a safe distance between the operator of the slip device and the slip device itself.

6. Claims 11, 19, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Poe (US 4,715,456).

Kelley teaches all the limitations of the above claims, except for the top and bottom arms forming a parallelogram shape in both the activated and deactivated positions.

Poe described a hydraulically actuated slip device for a well pipe. Poe further teaches the use of “parallel links” which, as seen in figure 5, clearly form a parallelogram shape in both the activated and deactivated positions.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the arm assembly of Kelley with the parallel link setup of Poe, in order to have allowed the slip system to be “operated within a reduced area” (Poe, abstract, line 4) and would have thereby improved operator safety.

7. Claims 12, 20, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Broussard (US 4,450,606).

With regard to claims 12 and 20, Kelley describes all the limitations of the above claims. Kelley does not teach the encasing of the pulling mechanism within a protective sheath.

Broussard discloses a slip elevator device. Broussard further teaches the use of a protective housing,” which encases the “working mechanism” (the pulling mechanism) of Broussard’s invention column 7, line 27).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have included the protective sheath of Broussard with the pulling mechanism of Kelley, in order to have “discourage[d] the entry of dust, drilling mud or other abrasive material to the working mechanism” (Broussard, column 7, line 29).

With regard to claim 25, Kelley discloses all of the limitations of the above claims. Kelley does not disclose the use of springs for manipulating the pulling mechanism.

Broussard discloses a slip elevator device. Broussard’s device uses a plurality of coil springs (figure 2, item 42) for the purpose of manipulating the pulling mechanism between the activated and deactivated position. Broussard states that “a plurality of coil springs is provided for biasing the linkage to the upper position thus elevating connected slips” (abstract, line 10).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the pneumatic cylinder of Kelley with the coil springs of Broussard, in order to have provided an equally effective biasing mechanism without the need for air lines or hydraulic fluid lines.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Moore.

Kelley discloses all the limitations of the above claims. Kelley does not disclose a slip puller apparatus wherein any portion of the device is outside the boundary of the rotary table.

Moore discloses a slip actuator device. Moore’s device is completely within the boundary of the rotary table, as seen in figure 1, where the rotary table is designated as reference numeral 1.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the actuating mechanism of Kelley with the actuating mechanism of Moore, in order to have allowed the slip actuator device to operate within the boundary of the rotary table and would have thereby improved operator safety.

With regard to the Examiner’s rejection of claims 2, 3, 4, 11, 12, 13, 15, 17, 19, 20, 21, 25, 26, and 29 under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of a number of references, Applicant has cancelled claims 15 and 25, and has amended claim 1 (from which claims 2, 3, 4, 11, 12, and 13 depend), claim 16 (from which claims 17, 19, 20, and 21 depend), and claim 23 (from which claims 26 and 29 depend), to overcome the Examiner’s rejections. Accordingly, Applicant asserts that claims 2, 3, 4, 11, 12, 13, 17, 19, 20, 21, 26, and 29 (which depend from amended claims) are now in condition for allowance.

Specifically, each one of the Examiner’s rejections relies on the disclosures of Kelley, in combination with one of a variety of additional references. However, as demonstrated above, claims 2, 3, 4, 11, 12, 13, 26, and 29 (as amended) each require that no portion of the “cylinder”

be outside the boundary of the rotary table. These claims also require that no portion of the “pulling mechanism,” which comprises “at least one bottom arm and a top arm, wherein the at least one bottom arm and the top arm exhibit a parallelogram geometry,” be outside the boundary of the rotary table as well. As the Kelley reference fails to disclose, *at a minimum*, a “cylinder” (referenced by the Examiner as item 43) wherein no portion is outside the boundary of the rotary table, and a “pulling mechanism” comprising “at least one bottom arm” (referenced by the Examiner as item 25) and “a top arm” (referenced by the Examiner as item 35) exhibiting a parallelogram geometry (*see* Kelley, Figs. 1 and 2), the Kelley reference, in combination with any one of the references cited by the Examiner, fails to disclose each and every limitation of claims 2, 3, 4, 11, 12, 13, 26, and 29 (as those claims have been amended). Accordingly, those claims are not rendered obvious under 35 U.S.C. § 103(a).

Moreover, claims 17, 19, 20, and 21 (as amended) each require that no portion of the “manipulating means” be outside the boundary of the rotary table, and that “the at least one bottom arm and the top arm” of the “connecting means” exhibit a “parallelogram geometry.” However, as demonstrated above, the Kelley reference fails to disclose, *at a minimum*, the “manipulating means” (referenced by the Examiner as item 43) wherein no portion is outside the boundary of the rotary table, and “connecting means” comprising “at least one bottom arm” (referenced by the Examiner as item 25) and “a top arm” (referenced by the Examiner as item 35) exhibiting a parallelogram geometry. *See* Kelley, Figs. 1 and 2. Accordingly, the Kelley reference, in combination with any one of the references cited by the Examiner, fails to disclose each and every limitation of claims 17, 19, 20, and 21 (as those claims have been amended). As such, those claims are not rendered obvious under 35 U.S.C. § 103(a).

As such, Applicant asserts that claims 2, 3, 4, 11, 12, 13, 17, 19, 20, 21, 26, and 29 (which all depend from amended claims) are now in condition for allowance.⁴

CONCLUSION

Applicants respectfully submit that the claims pending in this application include steps, elements, and features not disclosed, taught, or suggested by the cited references, either alone or in combination. Accordingly, Applicants submit that the pending claims are in condition for allowance, and respectfully request the allowance of these claims. The Examiner is invited to contact the undersigned attorney at 713.787.1446 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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⁴ Applicant also respectfully suggests that amended claims 2, 3, 4, 11, 12, 13, 17, 19, 20, 21, 26, and 29 are in condition for allowance in light of the prior art submitted concurrently herewith in the Supplemental Information Disclosure Statement.